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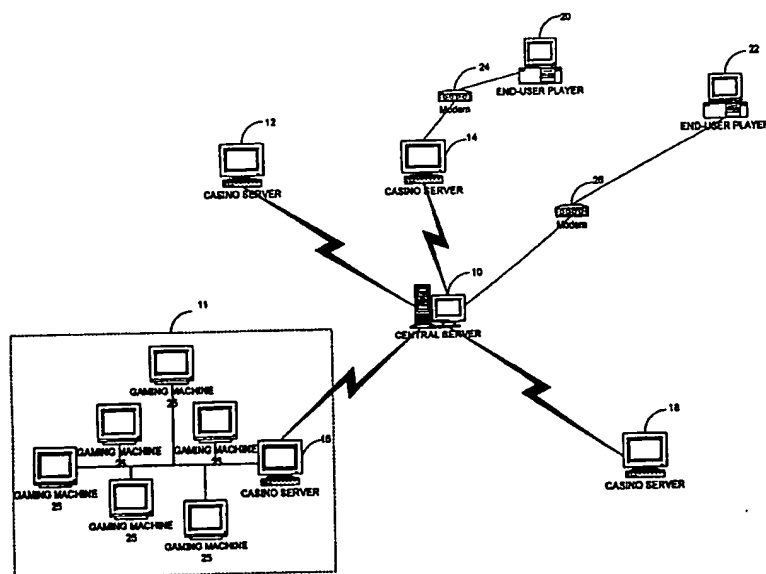
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(54) Title: **METHOD AND APPARATUS FOR MULTIPLAYER CASINO MACHINE GAMING SYSTEM**



(57) Abstract: A method of conducting a multiplayer game (100). The method includes providing an entry screen whereby players may place a bet on a multiplayer game (118). The players are grouped according to a grouping criterion (702-716). A software-based multiplayer game is provided that the players may play (126). A measure of a player's skill is provided for the players during the software-based multiplayer game. The measure may be determined to exceed a predetermined criterion (128). The player is then compensated whose measure exceeds the predetermined criterion in the determining step according to the player's bet (132).

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**METHOD AND APPARATUS
FOR MULTIPLAYER CASINO
MACHINE GAMING SYSTEM**

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BACKGROUND OF THE INVENTION

Gambling games have existed since antiquity. Most of these games are based heavily on chance. Some, such as slot machines, are based entirely on chance. The others, such as blackjack and
15 craps, require some skill for "success", where "success" is of course measured against an inherent house advantage.

Games of pure or primarily skill have not previously been successfully used in casinos because the skill element can overwhelm the inherent house advantage, thus making such games
20 unprofitable. Games of skill, however, can be highly attractive to players who enjoy the possibility of using their skills and wits to overcome odds against them.

It is understood that several current casino games employ some degree of skill. For example, skill in card counting,
25 while generally not permitted by casinos, can allow a player to accumulate substantial winnings, at least until the casino learns of the act of card counting. Such skills are obviously thought to be undesirable to casinos. On the other hand, roulette wheel tables are equipped with a device that notifies
30 onlookers of the last several winning numbers and their corresponding colors. Such a device is intended to assist bettors in choosing the numbers they bet. Winning bettors can skillfully notice patterns or such in the numbers. These skills are obviously encouraged by the casinos.

Casinos, both physical and Internet, currently lack games in which a player may compete against another player in a game of skill. There is a need for such a game.

SUMMARY OF THE INVENTION

5 The present invention addresses the deficiencies of the prior art described above. In particular, the invention allows a game of at least partial skill to be played by one player against another, with compensation given to a predetermined player, such as the winner. This invention may be employed no
10 matter what criteria are used to determine whether a player "won". The game may be used in a game of at least partial skill, such as non-banked blackjack or other casino games or a game of almost purely or purely skill such as a video game of the type currently made for PCs or, e.g., Playstations®.

15 In one aspect, the invention is directed to a method of conducting a multiplayer game. The method includes providing an entry screen on a URL whereby players may place a bet on a multiplayer game. The players are then grouped according to a grouping criterion. A software-based multiplayer game is
20 provided that the players may play. A measure of a player's skill on the software-based multiplayer game is provided. The measure may be determined to exceed a predetermined criterion. The player is then compensated whose measure exceeds the predetermined criterion in the determining step according to the
25 player's bet.

 Implementations of the invention may include one or more of the following. The grouping criterion may be at least one selected from the group consisting of: substantially the same bets or substantially the same time of bet placement. Each
30 player may have an identifier and each player is associated with a win percentage, and the grouping criterion may be at least one selected from the group consisting of: substantially the win percentage or a player choice. The method may be implemented on a server capable of accessing the internet. The software-based
35 multiplayer game may be a game of at least partial skill. The

game may be a video game. The players may place bets by choosing a bet from a given set of bets or by entering into a field on the URL a chosen bet.

In another aspect, the invention is directed to a computer
5 program, residing on a computer-readable medium, containing instructions for causing a computer to provide an entry screen on a URL whereby players may place a bet on a multiplayer game, group players according to a grouping criterion, provide a software-based multiplayer game that the players may play,
10 provide a measure of a player's skill on the software-based multiplayer game, measure the measure for the players during the software-based multiplayer game, determine when the measure exceeds a predetermined criterion, and compensate the player whose measure exceeds the predetermined criterion in the
15 determine step according to the player's bet.

In another aspect, the invention is directed to a method of providing a payout for a machine based game, including choosing a time period over which a measurement will occur on a first gaming machine, measuring a playing characteristic of a player
20 during the time period, calculating a rate of play based on the measuring step, and adjusting a payout of a second gaming machine based on the calculating step.

Implementations of the method may include one or more of the following. The first gaming machine may be one selected from
25 the group including: slot machines, keno machines, poker machines, blackjack machines, and other such games. The second gaming machine may be, e.g., a roulette wheel.

In another aspect, the invention is directed to a gaming system, including a central casino server and at least two
30 gaming machines coupled to the central casino server. The central casino server is configured to provide an entry screen on a URL whereby players may place a bet on a multiplayer game, group players according to a grouping criterion; provide a software-based multiplayer game that the players may play;
35 provide a measure of a player's skill on the software-based

multiplayer game; measure the measure for the players during the software-based multiplayer game; determine when the measure exceeds a predetermined criterion, and compensate the player whose measure exceeds the predetermined criterion in the
5 determine step according to the player's bet.

In a further aspect, the invention is directed to a computer program, residing on a computer-readable medium, containing instructions for causing a computer to provide an entry screen whereby players may place a bet on a multiplayer game, group
10 players according to a grouping criterion, provide a software-based multiplayer game that the players may play, provide a measure of a player's skill on the software-based multiplayer game, measure the measure for the players during the software-based multiplayer game, determine when the measure exceeds a
15 predetermined criterion, and compensate the player whose measure exceeds the predetermined criterion in the determine step according to the player's bet.

In another aspect, the invention is directed to a computer program, residing on a computer-readable medium, containing
20 instructions for causing a computer to provide an entry screen whereby players may place a bet on a multiplayer game, provide a software-based multiplayer game that the players may play; determine which player wins, and compensate the winning player according to the player's bet.

25 Advantages of the invention may include one or more of the following. Players may gamble on games of skill. Players who may ordinarily play or are used to playing computer or television video games may be induced to play such games in a casino setting. Players may use their skills to accumulate
30 gambling winnings. Players who would ordinarily not play casino games may be highly enticed to play. These advantages and others will become more apparent by the description that follows, including the drawings and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows a network layout of a gaming system according to a first embodiment of the system of the present invention.

Fig. 2 shows a flowchart of a first embodiment of the
5 method of the present invention.

Fig. 3 shows a flowchart of a second embodiment of the method of the present invention.

Fig. 4 shows a layout of a betting level scheme, which may be implemented in the system and method according to the
10 embodiments of the invention.

Fig. 5 shows a flowchart of a third embodiment of the method of the present invention, showing an inventive scheme used with a game.

Fig. 6 shows a flowchart of a step that may be used within
15 the third embodiment of the method of the present invention of Fig. 5.

Fig. 7 shows an embodiment of a multiplayer game according to the principles of the present invention.

Fig. 8 shows a more detailed embodiment of a multiplayer
20 game roughly analogous to Fig. 7.

Fig. 9 shows an embodiment of a multiplayer game employing both hard-wired connections to game machines and a dial-up or internet connection to a game machine such as a home computer.

Fig. 10 shows an embodiment of a multiplayer game employing
25 internet connections to game machines such as home computers.

Fig. 11 shows a flowchart of a multiplayer game system employing preset bets from which a player chooses.

Fig. 12 shows a flowchart of a multiplayer game system employing a variable bet which a player sets.

30 Table I shows an exemplary payout schedule which may be used within the third embodiment of the method of the present invention of Fig. 5.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Fig. 1, a network layout of a gaming system is shown. A central server 10 is depicted with numerous connections to a plurality of casino servers 12, 14, 16, and 18. Casino server 16 is shown within a casino 11. It will be apparent to one of skill in the art using the teachings of the present specification that variations may be made even of this simple theme. For example, casino servers 12-18 may themselves perform the functions of central server 10, thus eliminating the need for a central server 10. However, advantages may inure to the use of such a central server 10 as will be shown.

Casino servers 12-18, located within or communicatively coupled to a casino such as casino 11, may each service a number of gaming machines 25. Gaming machines 25 will be described in more detail below.

Players not located in a casino may also use the gaming system. For example, in an alternative communications setup, also shown in Fig. 1, casino servers such as casino server 14 may be linked via a modem 24 to an end-user player computer 20. Alternatively, an end-user player computer 22 may be linked directed via a modem 26 to central server 10. Of course, in cases where the gaming machines are used for gambling, security systems should be instituted to ensure that only players located in legal gambling locations could log in and use the system.

A benefit to the above system is that the use of an on-site casino server allows the management of a casino to vary treatment to players if desired such as to high rollers. Such varied treatment is often afforded a casino's best players currently, and this treatment can be continued in methods using the present invention.

Central server 10 performs numerous functions. One of these functions may be to receive all the scores of all the players of a particular game of skill from all casino servers connected to central server 10. These aggregated scores are

used to calculate a betting level (described below). Central server 10, for reasons also described below, may also calculate an average score.

Referring to Fig. 2, an embodiment of a method 100 according to the present invention is now described. The gaming machine 25 may query the player as to what game is desired to be played (step 102). This step is optional as is indicated by a dotted box. This step would only be used for gaming machines 25 offering a plurality of game choices. Game choices may include blackjack, poker, slots, or games of skill such as arcade games or even sporting games as are common in bars and restaurants. The game choices are only limited by the mechanics of the game console. For convenience, a game is described below which is purely a game of skill. In other words, the player receives a score based only and solely on how skillfully they play the game. Of course, the invention is not to be limited solely to such games.

The player thus chooses which game to play (step 104). Game data is stored as to which game was chosen (step 106). This game data is referred to in the flow chart as game data 108.

The machine may then query the player as to what payout is desired (step 110). This step is also optional because the game data may be fixed at, e.g., 1:1. The player chooses the payout (step 112), and the payout data is stored (step 114) as payout data 116.

The player betting level is determined (step 118). In essence, this determination is simply a storage of the amount the player has wagered on the game.

A required score is then calculated from a number of factors (step 120). This step is also described in more detail below. The factors may include (but are not limited to) the payout desired, the aggregate of player scores, and the house advantage.

The required score is then displayed to the player (step 122), who is then given a chance to cancel (step 124). If the player cancels, the game ends (step 134). If the player does not cancel, then the player plays the game (step 126).

5 In one embodiment, shown in Fig. 2, if the player achieves a score that is determined to be greater than or equal to the required score (step 128), then the game ends and the success of the player is indicated and displayed (step 130). If the player score does not exceed the required score, then game ends (step 10 136). Of course, the player may be given a chance to play again if desired. In the case where the player wins, the player's account may be duly credited (step 132) and the player may be given a chance to play again (step 138). If the player chooses to play again, the machine may again query the player as to what 15 game is desired (step 102). If the player does not so choose to play again, the player account may be optionally cashed out (step 140).

In a second embodiment, shown in Fig. 3, many of the steps are similar to those of Fig. 2. However, in Fig. 3, if the 20 player score exceeds the required score, play may continue until a natural termination point of the game is reached. At this point, the player may have achieved a score well in excess of the required score. Such an exceptional score may qualify the player for premium prizes such as a progressive jackpot. The 25 progressive jackpot may be funded by losing bets.

In another embodiment, the need for a separate server is eliminated. In particular, each machine may have embedded therein a processor, which may be the same processor operating the machine itself, that performs the functions of the server 30 described above. This processor may, of course, have less data than a server or casino server, but the appropriate statistics, as described above and below, may still be effectively performed.

The method whereby betting levels and required scores are 35 determined is now described in more detail. Referring to Fig.

4, an example of a betting level and required score scheme are shown. It should be noted that Fig. 4 is only meant for illustration. A real system would have a far greater number of score entries and betting levels. The required scores shown are merely estimates based on a sample house advantage. A real system may construct a statistical model of the game scores, compute a statistically accurate house advantage, and thus calculate an accurate required score.

As shown in Fig. 4, a number of betting levels 302 are shown. Each betting level has associated with it a list of scores (lists 304, 306, and 308). These lists of scores are lists of the aggregated scores of all the games played associated with a particular betting level. For example, the aggregated scores associated with betting level 5 are shown by list 304, and so on. Of course, the lists and betting levels shown in Fig. 4 are just sample data and do not necessarily represent actual scores.

In the first embodiment of the method described above, it was noted that the game may be halted at the point where the player exceeds the required score. For purposes of the betting level list, the casino server may, in appropriate games, add to the player's score (as reported to the list) the average number of points the player was winning at a moment in time, such as when the game ended, multiplied by a remaining time (if the game is subject to a time limit). Such a facility may increase the overall accuracy of the list.

Given a particular wager, which determines the betting level, the associated list and house advantage may uniquely determine the required score. The method of determination is somewhat arbitrary and depends on the casino. For example, the method may be as simple as taking a median or mean of the list and adding a non-zero house advantage (e.g., 2%). On the other hand, more sophisticated systems take account of the fact that adding a house advantage to a score is not the same as adding the house advantage to a list of player scores.

The required score may also depend on the desired payout, a variable that as noted above may be optionally chosen by the player in some gaming machines. For example, if a player desired a 20:1 payout instead of 1:1, the required score may be correspondingly higher, e.g, the casino server or central server may require that the player score in the top 3% of their betting group (if the correct odds would indicate the top 5%) to account for the required house advantage.

In the case where the player is the first player to place a particular wager or betting level, the average which can be used is the average over all of the lists. Alternatively, an average can be computed based on betting levels close to the new betting level.

It should be noted that, with respect to payout levels, the game may be structured as follows. If a player desires a 9:1 payout, he or she may be required to score in the top 10% of all players playing for a 9:1 payout, not just in the top 10% of all players. This may be illustrated as follows. In a game of 100 players, each betting one chip each, and each choosing a 9:1 potential payout, 90 players lose and 10 players win. The total number of chips received by the house as bets is 100. The house pays out 10 players times 9 chips per player (9:1 odds) for a total payout of 90 chips. Each of the 10 winning players each gets their original 1 chip bet back, for a total payout of 100 chips. This example is for the case of a 0% hold by the house. The numbers may adjust accordingly for nonzero holds.

In another embodiment, as shown in Fig. 5, a game of pure chance, at least partially chance, or of skill may be subject to a desired amount of "skill". In this embodiment, a game of chance such as a slot machine is played by a player whose identification ("ID") has been logged by the casino in much the same way IDs are logged for "slot clubs" currently. While the embodiment described here discusses a slot machine, herein termed a "machine", the invention is clearly applicable to other such games, including games of chance, games of skill, and games

of both skill and chance. This ID is used to ascribe to that player a certain rate of play, this rate of play being used to then calculate a payout unique to that player. In this way, casinos may provide a higher payout to those players who play the most or who play the most often. In this specification, the term "payout" is used to refer to the percentage of the player's money that is returned to the player in the form of winnings. If, for example, a house has a 98% payout, then 98% of the gambling receipts are paid out to players, and the house return is 2%. In the present invention, the house can provide payouts greater than 100% safely, with no fear of monetary losses. Such games would be highly valued by players, increasing the games' attractiveness and thus income potential.

In a general sense, such a game is described in Fig. 5. Step 501 concerns retrieval or assignment of the player's ID. This step does not necessarily entail obtaining the name, address, etc., from the player, but rather is a step of logging the player in to the system so that the player's rate of play can be compared with other player's rates of play. The ID may be determined, in one embodiment, by insertion of a card having a magnetic strip that bears the relevant details of the player. So long as this card is inserted in the machine, the players actions will be assigned to the associated player ID. Of course, in some situations, a player may switch seats or machines and not retrieve their card from the machine. In this event, the networked system simply adapts to the new player after a preset time constant whose nature is described later. Also in this event, the new player's playing characteristics are written to the card after they are determined.

It should be clear that the card concept itself is not required in the practice of the invention. The card concept may be used when it is desired to immediately obtain various rate of play characteristics of a player. In general, if the time constant of the networked system is short enough, the system can

adapt to a new player within a minute or so of the player's start of play on a new machine.

Step 502 is the actual play of the player. The player can be playing games based entirely or almost entirely on luck or
5 chance, such as slots, or games based at least partially on chance, such as blackjack, etc.

The "time constant" of the system is defined as the time between samples of the networked system of a given machine. For
example, one machine may calculate the rate of play given one
10 minute of play: if a player is playing a slot machine and pulls the handle five times in one minute, and bets \$1.25 per spin, the player's normalized rate of play is 300 plays per hour at \$1.25 per play.

Step 504 is the step of calculating the player's rate of
15 play. This step is explained in more detail in Fig. 6 and in Table I. Generally, this step ascribes a certain rate of play to a player based on the number of plays per set time period, such as per hour, and amount played. Of course, either or both of these factors, as well as others, may alternatively be used
20 singly or together. A general look-up table may be used, as in Table I, or an analytic equation may be used to determine the payout. In Table I, for example, a slow player who doesn't bet much or often, such as the player who plays 100 times per hour and for only 1 unit (arbitrary) per bet, may be assigned a
25 payout of 97%. However, a player who plays a lot, e.g., a thousand times per hour, and who bets 5 units (arbitrary) per bet, may be assigned the highest payout, e.g., 106%. Of course, it should also be noted that the values in Table I are preferably not static - i.e., they change as players' rates
30 change. The cumulative average of all players, at any given point in time, should be associated with the chosen house advantage. If the house advantage is chosen to be 2%, then the cumulative house average over all players should be 98%. Thus, the values in Table I should be considered to be on a scaled
35 curve. If all the players at a given casino are playing at

rates of 1000 plays per hour and betting the maximum amount, then the entire Table I should be scaled up to account for this fact. The result of the scaling up should be that the overall house advantage is achieved.

5 In another embodiment, a degree of freedom may be removed from such a table by programming the algorithm or system to group and compare players according to a specific player characteristic, such as how much they bet. In other words, the system may only compare players who have substantially the same
10 value for one or more player characteristics, such as those who bet substantially equal amounts. This may allow for considerable simplification of the algorithm.

Fig. 6 depicts a flowchart version of the general algorithm. A measurement frequency is determined (step 602) by
15 the casino. This frequency may be longer, for ease of calculation efficiency, or shorter, for more accurate real-time determination of the correct payout. A time period is started (step 604). The number of plays is measured during this time period (step 606). The amount bet is determined for the same
20 time period (step 606). The time period may then end as determined by the measurement frequency (step 608). An average bet may be determined for the time period (step 609). The payout percentage may then be adjusted according to the calculated values (step 610). The whole process may then repeat
25 (step 604).

However the payout percentage is determined, the player ID may then be assigned (step 506) a payout percentage based on the rate of play determined in Step 504. This payout percentage is applied to the machine such that the same pays out the
30 percentage while the player with the particular player ID is playing the machine, as determined by the card inserted in the machine or by the instantaneous rate calculated. The method by which a machine is programmed to pay out a specified percentage is known.

In another embodiment, rather than increasing the payout percentage, the player may simply be awarded a prize, such as cash or a tangible gift, for achieving a high rate of play. In this embodiment, the criteria for winning the cash or tangible
5 gift may be practically any criteria determinable from the received information: rate of play, overall number of pulls, lowest win percentage, highest win percentage, etc.

In yet another embodiment, the player may simply be awarded increased or better odds on a game of chance or on a mixed game
10 of chance and skill. For example, players may play a game of skill, chance, or a mixed game of partial skill and partial chance. Once the game is completed, players will be given a notification as to whether they scored above average or below average. Of course, numerous gradations of this are possible.
15 In any case, players may then be presented with a new screen where another game is presented, a game of at least partial chance. The odds of winning for any given player, in this game of at least partial chance, depend on the player's score in the prior game. For example, if the player scored above average in
20 the prior game, the odds of winning may be in their favor in the second game. If the player scored below average in the prior game, the odds of winning may be more in the house's favor in the second game. One advantage of such a game is that low scoring players do not necessarily lose every time they play -
25 they are simply at a larger disadvantage.

In another embodiment, games of at least partial skill may be played in a multi-player environment, with a "win" criteria determining which player receives a payout. In this embodiment, as shown in Figs. 7-11, a number of players may play a game of
30 at least partial skill. For example, referring in particular to Fig. 7, eight players 702, 704, 706, 708, 710, 712, 714, and 716 may play a game of skill using eight video monitors and associated processing linked through a hub 701. For example, this simulated game may be a video "Paintball" game where
35 players shoot electronic "paintballs" at each other. The last

player to remain "un-hit" may be termed the winner. In other words, the win criterion may be that a player not be hit by a paintball and all of the other players have been hit by a paintball. In general, the win criterion may be whatever
5 feature in the game is determinative of one player "beating" another.

Players may be matched in numerous ways. For example, in a first embodiment, players may simply choose to play other known players. In this situation, each player is given an identifier
10 (ID). This ID is given to the system by the player upon log-in. A player may then choose to play a player identified by another ID (e.g., a friend, relative, etc.).

In a second embodiment, players may choose to be matched with players having roughly the same win percentage, as that win
15 percentage is determined by the player's history. This system also requires knowledge and input of a player's ID. For example, as a player plays numerous games on the system, the player's ID becomes associated with a certain win percentage over time. This win percentage, of course, may vary depending
20 on the game played. The player may, upon log-in, choose to play players of a similar win percentage or players whose win percentages are in a same preset range of win percentages. Alternatively, players may be enabled to play against other players having higher win percentages. This may afford the
25 player an opportunity to increase their skills and perhaps increase their win percentages. Such players may receive higher odds by the system in return for a lessened likelihood of winning. Correspondingly, players may be allowed to play against players of lower win percentages. In this system, it may be
30 highly preferable to reduce such players' odds.

In another embodiment, the players 702-716 may be grouped according to their bets. In one embodiment, for example, the players 702-716 are grouped together by virtue of all having bet the same amount. In another embodiment, for example, the
35 players 702-716 are grouped together by virtue of all having bet

in the same range of amounts. For example, the players 702-716 may all have bet within a \$5 range of each other.

It should thus be clear that such multiplayer games may, with appropriate networking and linking, extend almost anywhere geographically. For example, one player in Las Vegas may play
5 against another in Antigua by virtue of having bet (i.e., inserted money in a machine or given money to an attendant) approximately the same amount at approximately the same time.

This system is shown in more detail in Figs. 8-10. Fig. 8
10 continues the description of an eight-player simulated Paintball game. Each player may, e.g., play against other players physically located within the same casino, or even the same playing area (Fig. 8), or may play via the internet with players anywhere in the world (Figs. 9-10). Moreover, players may play
15 via their own Internet connection, e.g., in their houses, so long as an appropriate payment is made. In this case, payment would typically be made by drawing against an existing account or by credit card. If players compete by a home Internet connection, appropriate software may be downloaded, given free,
20 or purchased, so as to provide the game or simulation on the player's computer.

In particular, referring to Fig. 8, in a first case the hub 701 may be identified with a casino server 804, or a program running on a server, within a casino and not linked to the
25 Internet. Alternatively, in a second case, and referring to Fig. 9, the hub 701 may be a casino server 904, or a program running on a server, within a casino and linked to the Internet. Alternatively, in a third case, and referring to Fig. 10, the hub 701 may be a server 1002, or a program running on a server,
30 not within a casino but linked to the Internet.

These cases are now described in more detail. In the first case (Fig. 8), all machines 806 on which the game may be played would be located in the casino. Of course, a local area network (LAN) could be provided to link a machine in a casino hotel room
35 if desired. Billing may be made by credit card or by charging

the player's room. Players may also dial in to the casino server 804 using a modem and computer, if desired. This case is not the same as an Internet connection. This case is shown in Fig. 8 where the casino server 804 is coupled to eight casino machines 806.

In the second case (Fig. 9), players may play using all the methods available in the first case. Players may also sign on to a casino server 904 using their home computer 902 and a modem 903 to allow access to the Internet. For example, a player may sign on to America Online® and then point their browser at a URL specifying the location where the multiplayer game will occur. Play may also occur at a number of casino machines 806.

In the third case, the in-casino option is not available. Players have to sign on via their Internet connections. Players may also sign on to a server 1004 using their home computer 902 and a modem 903 to allow access to the Internet. For example, a player may sign on to Excite@Home® and then point their browser at a URL specifying the location where the multiplayer game will occur.

However the players sign on, notification may be sent to all players of the beginning of an impending game. Numerous games may begin at the same time, and games may be staggered in their starting times, so as to accommodate a large number of players and to minimize the time that a player must wait prior to starting play.

As the games are grouped according to bet, an announcement of a game may include an announcement of the bet required or of the range of bets required. This variety is shown in Fig. 11. Alternatively, as indicated in Fig. 12, each player may, when signing on, indicate what they intend to bet and thus be grouped at that point. Players may, however, change betting groups or games after signing on as well.

Referring to Fig. 11, an embodiment of the invention is shown in which a list of available games is provided at a sign

on screen. This list describes available bets (which may also include required bets) (step 1108) and starting time (step 1106). The list may also optionally describe a desired payout odds (step 1114). For example, a player may sign up for game X at bet Y and further at odds Z. In this case, the calculation of a win criterion would take odds Z into account. For example, if Z is 2:1 and Z' is 10:1, the win criterion for odds Z' would be more difficult to achieve than that at odds Z.

In more detail, a player may log on to the game site (step 1102) and see a list of games displayed (step 1104). The player chooses the desired game (step 1110). Of course, the player, if for example highly skilled, may play a number of games in different windows. In this case, the player may choose a number of different games. The program determines whether room exists for any more players (step 1111). If so, the program waits for more players to log on. If a sufficient number of players has signed on at the preset time of the beginning of the game, the game commences. If an insufficient number has signed on, the game may be cancelled. If the maximum number of players for a game has been met prior to the preset time for a game, the game may commence immediately and another game started. That is, another game may begin to accumulate players.

Once the game begins, the players may play the game (step 1112). At some point, a player may achieve the preset win criteria (step 1116). At that point, the winner or winners may be appropriate compensated according to the win criteria, bet, and odds (if chosen).

In Fig. 12, by contrast, the player chooses the type of game to be played (step 1210) and also chooses the bet to be placed (step 1202). The bet may then determine to which game the player is assigned (step 1204). The remainder of the system is analogous to Fig. 11.

It should be noted that, in all of the embodiments described above, the manager or owner of the casino server or internet server may generate revenue by receiving a set or

variable percentage of the amount bet. Such a house advantage is accounted for in calculating the payoff to the winner.

Of course, it will be clear to one of skill in the art that the above description only describes certain embodiments of the invention and accordingly that the scope of the invention is limited only by the scope of the claims appended hereto, and equivalents thereof. For example, while many steps are shown in the accompanying flowcharts and figures, not all the steps are necessarily required for each practice of the invention.

Moreover, where the term "game of chance" is employed, it is intended to encompass not only games entirely of chance, such as slots, but also games partially of chance, such as roulette. Further, while an embodiment describing a slot machine has been disclosed, the invention is applicable to virtually any game.

In the embodiments, e.g., in Fig. 4, the list of scores employed to calculate the required score may use a history of scores achieved at a common payout ratio value.

CLAIMS

What Is Claimed Is:

- 5 1. A method of conducting a multiplayer game, comprising:
 - a. Providing an entry screen on a URL whereby players
 may place a bet on a multiplayer game;
 - b. Grouping players according to a grouping criterion;
 - c. Providing a software-based multiplayer game that the
10 players may play;
 - d. Providing a measure of a player's skill on the
 software-based multiplayer game;
 - e. Measuring the measure for the players during the
 software-based multiplayer game;
 - 15 f. Determining when the measure exceeds a predetermined
 criterion; and
 - g. Compensating the player whose measure exceeds the
 predetermined criterion in the determining step
 according to the player's bet.
- 20 2. The method of claim 1, wherein the grouping criterion is
 at least one selected from the group consisting of:
 substantially the same bets or substantially the same
 time of bet placement.
- 25 3. The method of claim 1, wherein each player has an
 identifier and each player is associated with a win
 percentage, and wherein the grouping criterion is at
 least one selected from the group consisting of:
30 substantially the win percentage or a player choice.
4. The method of claim 1, wherein the method is implemented
 on a server capable of accessing the internet.
- 35 5. The method of claim 1, wherein the software-based
 multiplayer game is a game of at least partial skill.

6. The method of claim 5, wherein the game is a video game.
7. The method of claim 1, wherein the players place bets by
5 choosing a bet from a given set of bets.
8. The method of claim 1, wherein the players place bets by entering into a field on the URL a chosen bet.
- 10 9. A computer program, residing on a computer-readable medium, containing instructions for causing a computer to:
 - a. Provide an entry screen on a URL whereby players may place a bet on a multiplayer game;
 - 15 b. Group players according to a grouping criterion;
 - c. Provide a software-based multiplayer game that the players may play;
 - d. Provide a measure of a player's skill on the software-based multiplayer game;
 - 20 e. Measure the measure for the players during the software-based multiplayer game;
 - f. Determine when the measure exceeds a predetermined criterion; and
 - g. Compensate the player whose measure exceeds the
25 predetermined criterion in the determine step according to the player's bet.
10. A method of providing a payout for a machine based game, comprising:
 - 30 a. choosing a time period over which a measurement will occur on a first gaming machine;
 - b. measuring a playing characteristic of a player during the time period;
 - c. calculating a rate of play based on the measuring
35 step; and

d. adjusting a payout of a second gaming machine based on the calculating step.

- 5 11. The method of claim 10, wherein the first gaming machine is one selected from the group consisting of: slot machines, keno machines, poker machines, and blackjack machines.
- 10 12. The method of claim 10, wherein the second gaming machine is a roulette wheel.
- 15 13. A gaming system, comprising:
 a central casino server;
 at least two gaming machines coupled to the central casino server;
 the central casino server configured to:
 a. Provide an entry screen on a URL whereby players may place a bet on a multiplayer game;
 b. Group players according to a grouping criterion;
20 c. Provide a software-based multiplayer game that the players may play;
 d. Provide a measure of a player's skill on the software-based multiplayer game;
 e. Measure the measure for the players during the software-based multiplayer game;
25 f. Determine when the measure exceeds a predetermined criterion; and
 g. Compensate the player whose measure exceeds the predetermined criterion in the determine step
30 according to the player's bet.

14. A computer program, residing on a computer-readable medium, containing instructions for causing a computer to:
- 5 a. Provide an entry screen whereby players may place a bet on a multiplayer game;
- b. Group players according to a grouping criterion;
- c. Provide a software-based multiplayer game that the players may play;
- 10 d. Provide a measure of a player's skill on the software-based multiplayer game;
- e. Measure the measure for the players during the software-based multiplayer game;
- f. Determine when the measure exceeds a predetermined criterion; and
- 15 g. Compensate the player whose measure exceeds the predetermined criterion in the determine step according to the player's bet.
- 20 15. A computer program, residing on a computer-readable medium, containing instructions for causing a computer to:
- a. Provide an entry screen whereby players may place a bet on a multiplayer game;
- 25 b. Provide a software-based multiplayer game that the players may play;
- c. Determine which player wins; and
- d. Compensate the winning player according to the player's bet.

16. A gaming system, comprising:

a gaming machine, the gaming machine configured to:

receive a betting level;

calculate a required score using a list of scores

5 corresponding to the betting level and a house

advantage; and

use the required score as a score to be attained in a
game of at least partial skill.

10 17. The gaming system of claim 16, wherein the list of
scores represents scores achieved at a common value of
payout ratio.

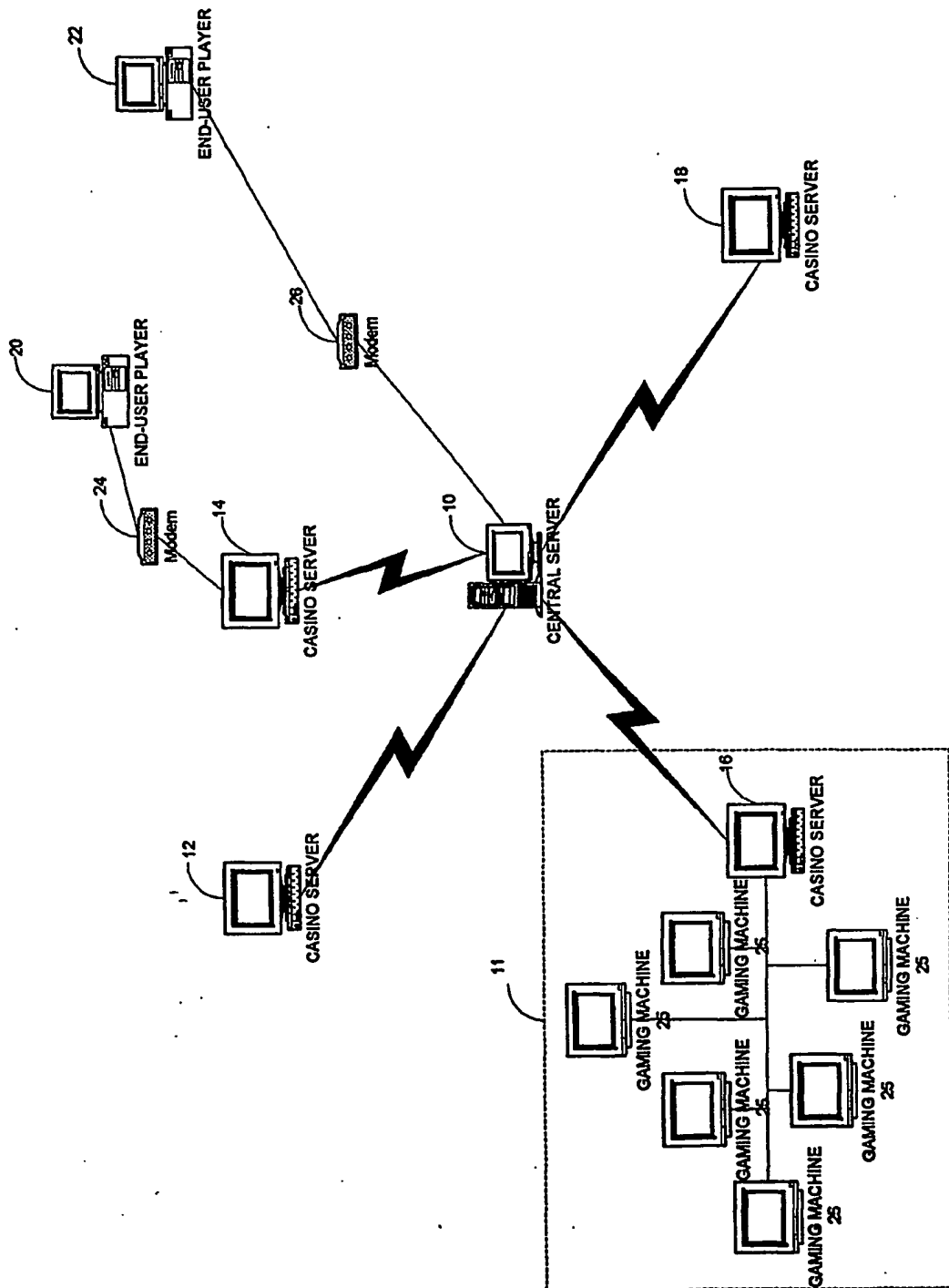


FIG. 1

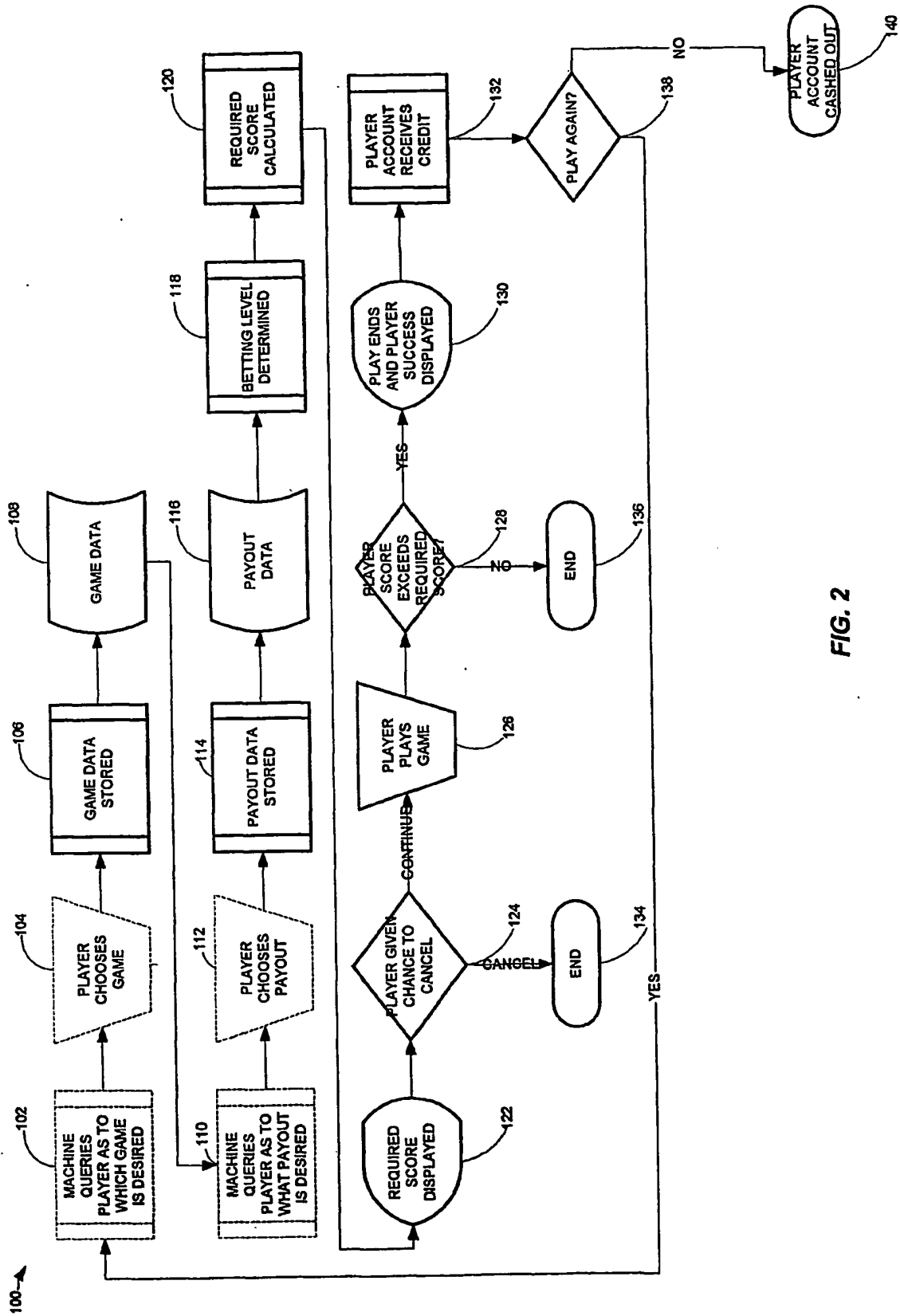


FIG. 2

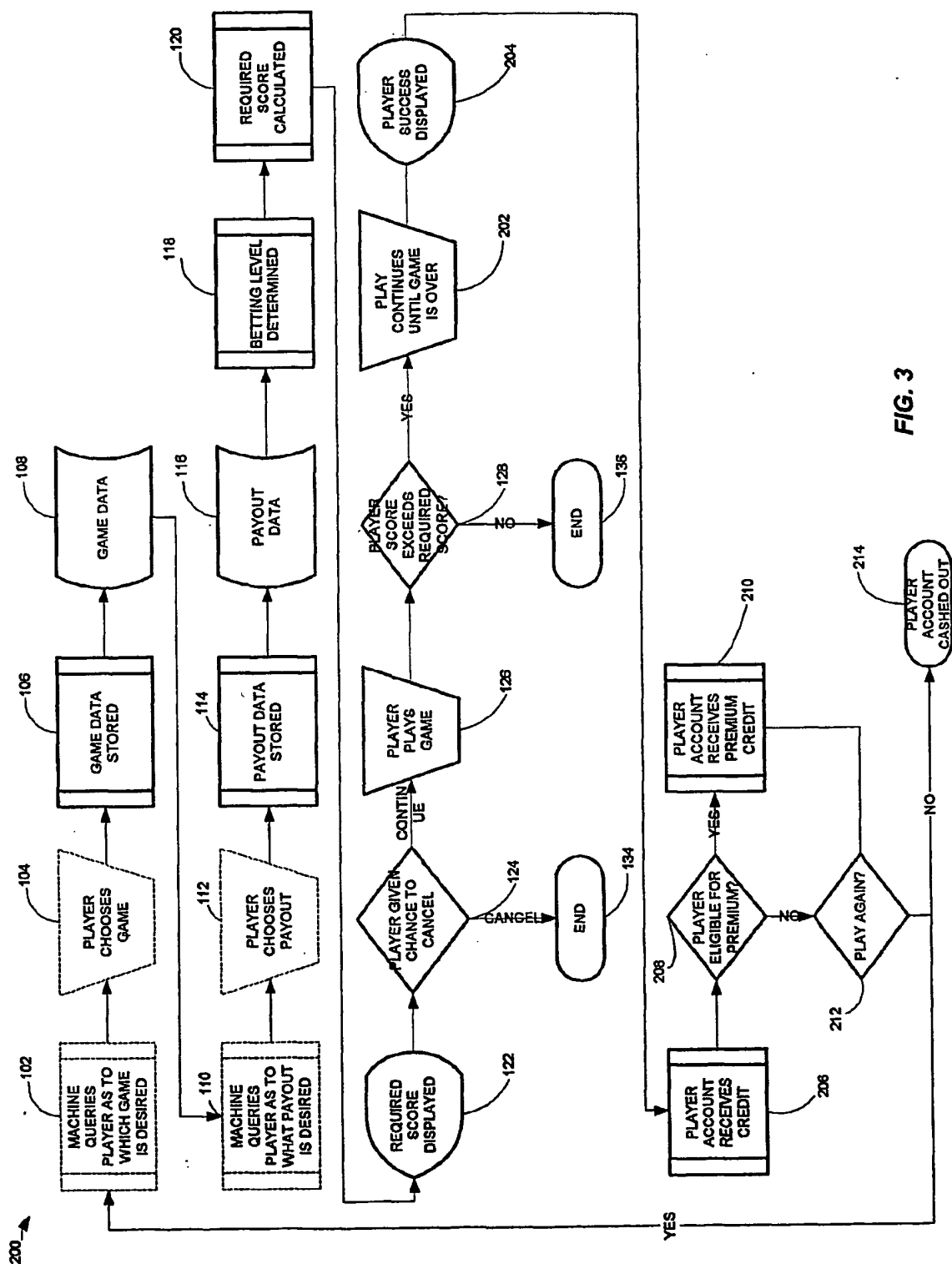


FIG. 3

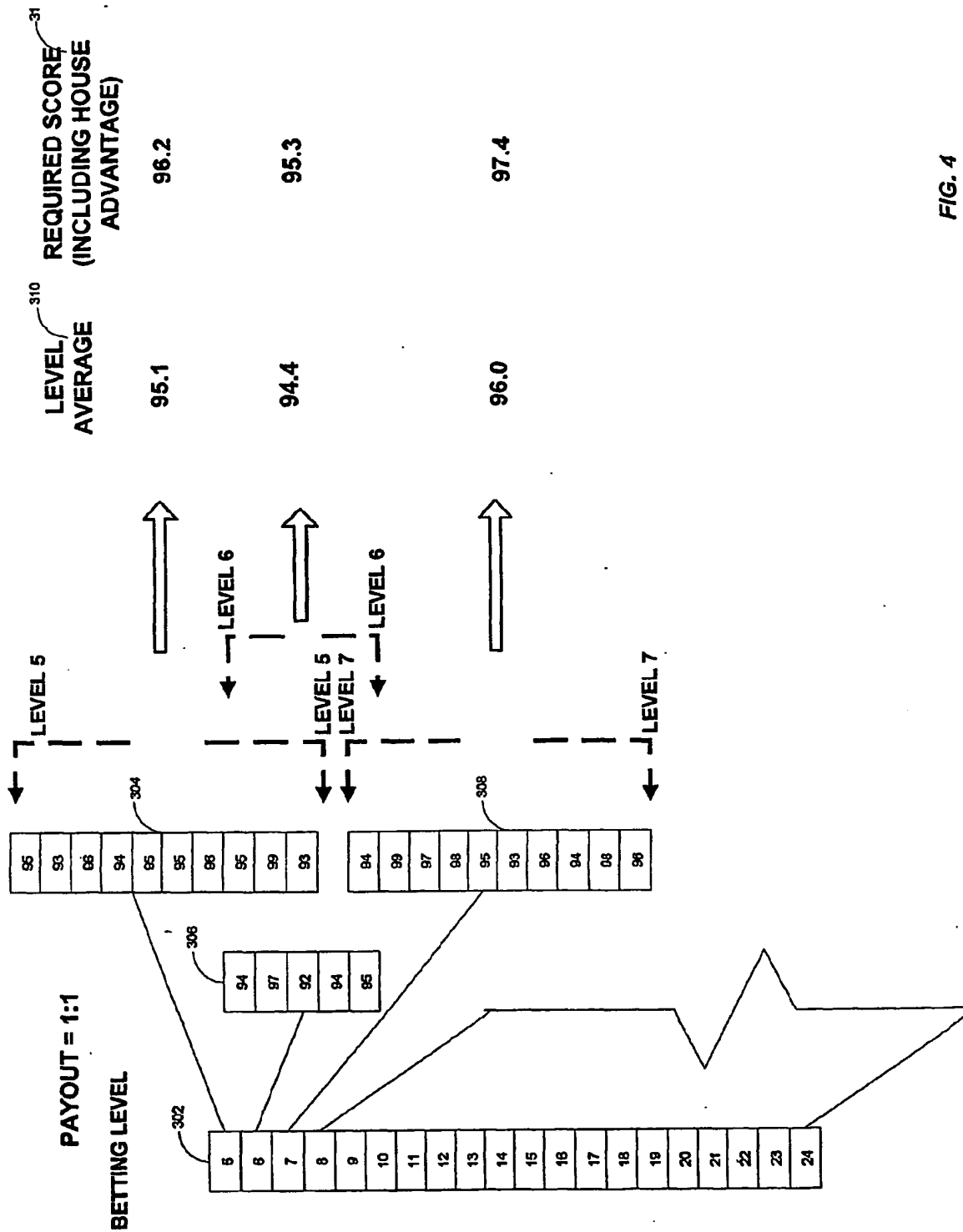
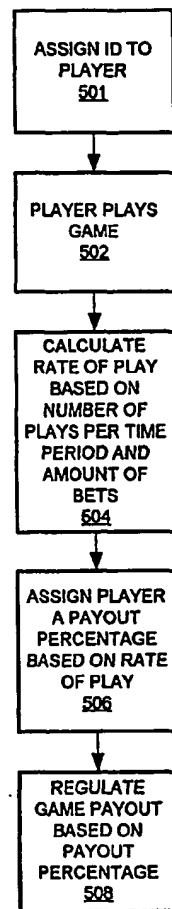


FIG. 4

**FIG. 5**

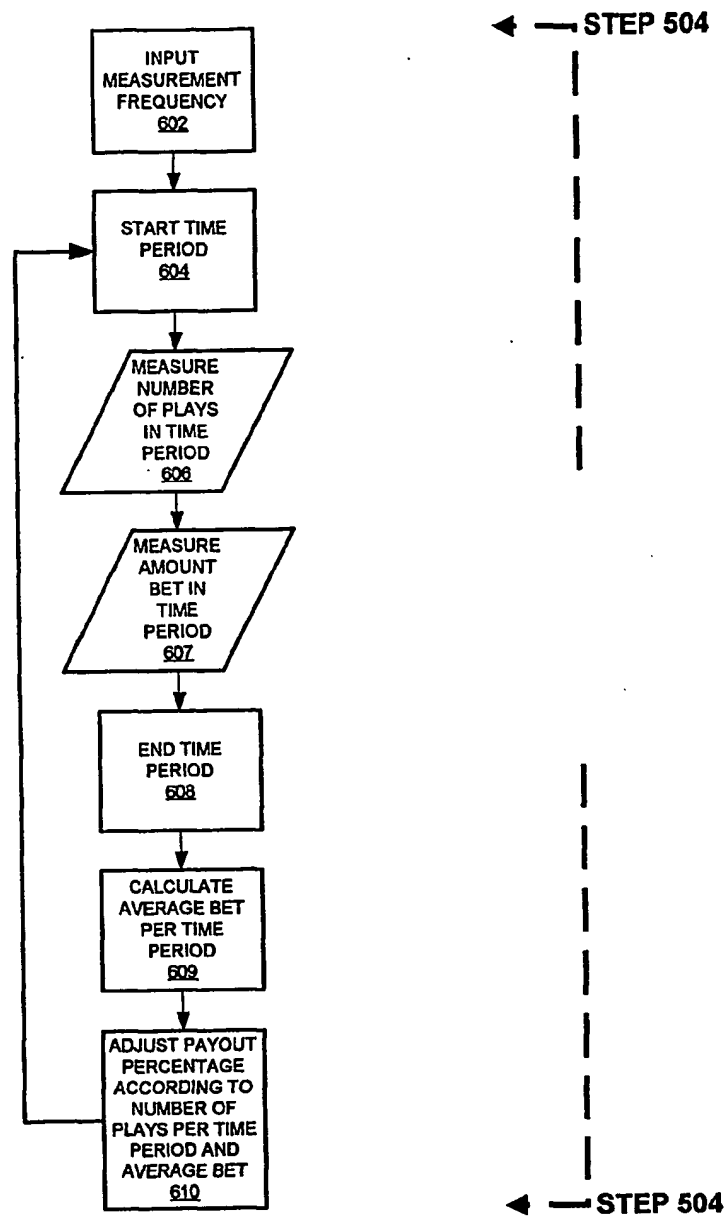
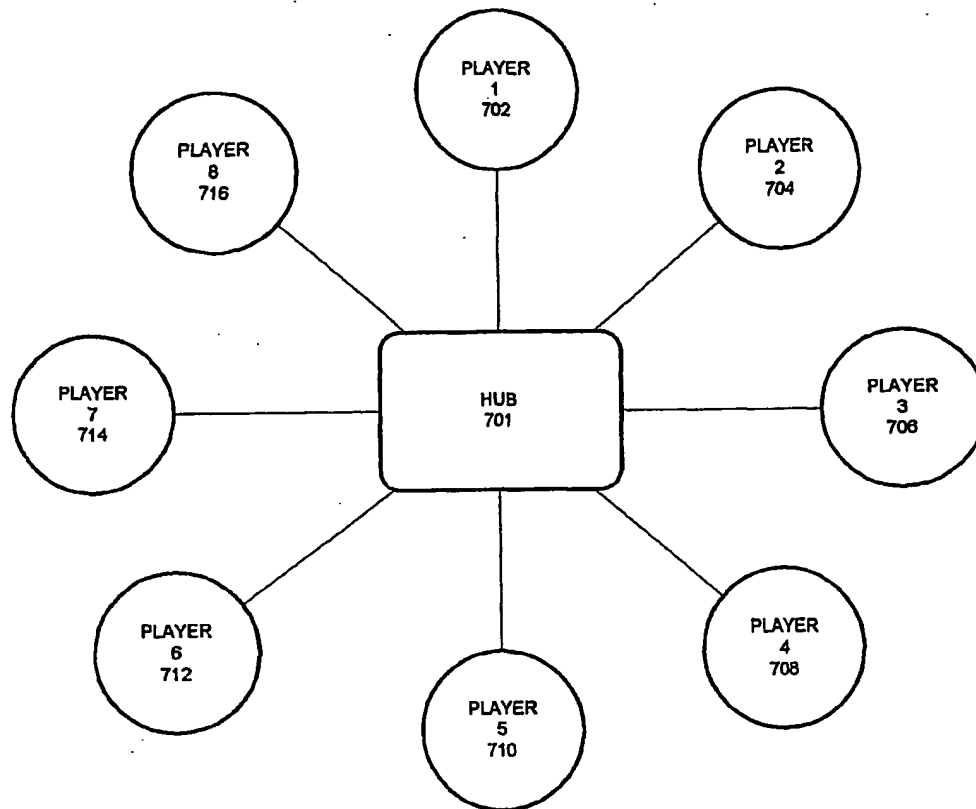
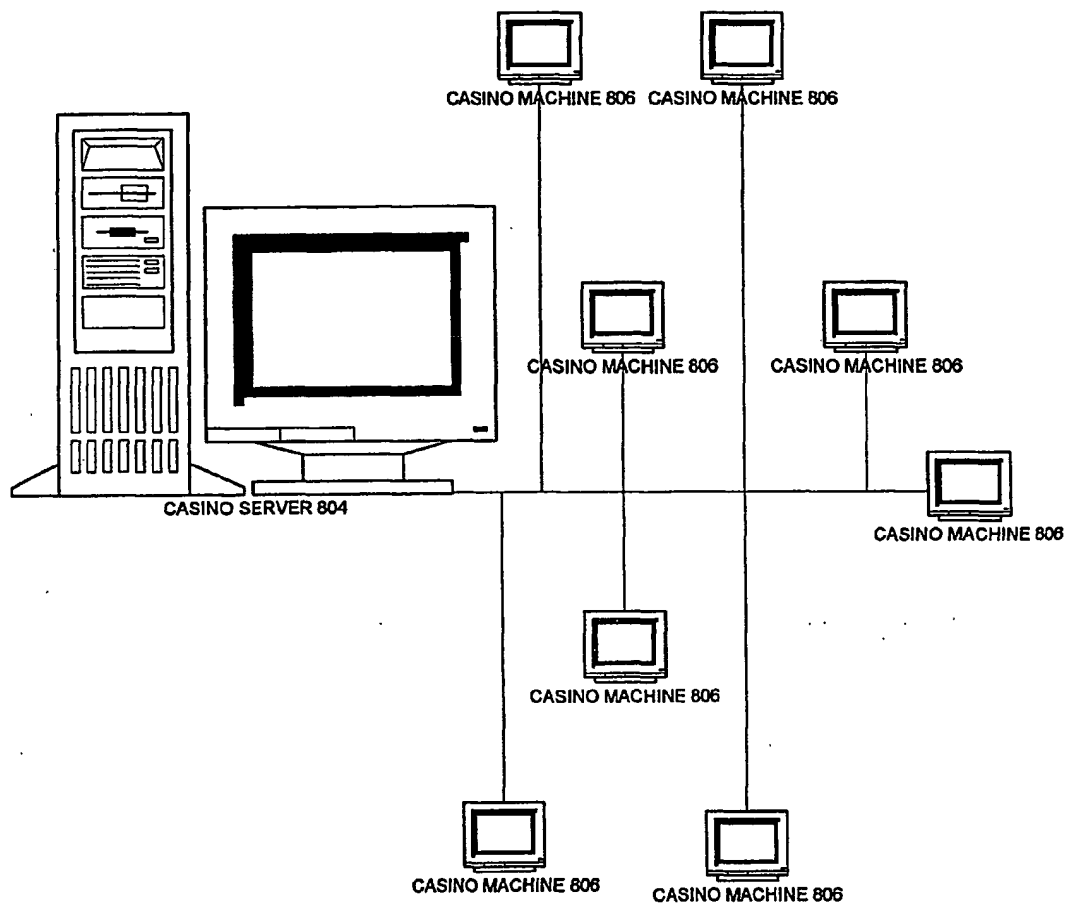
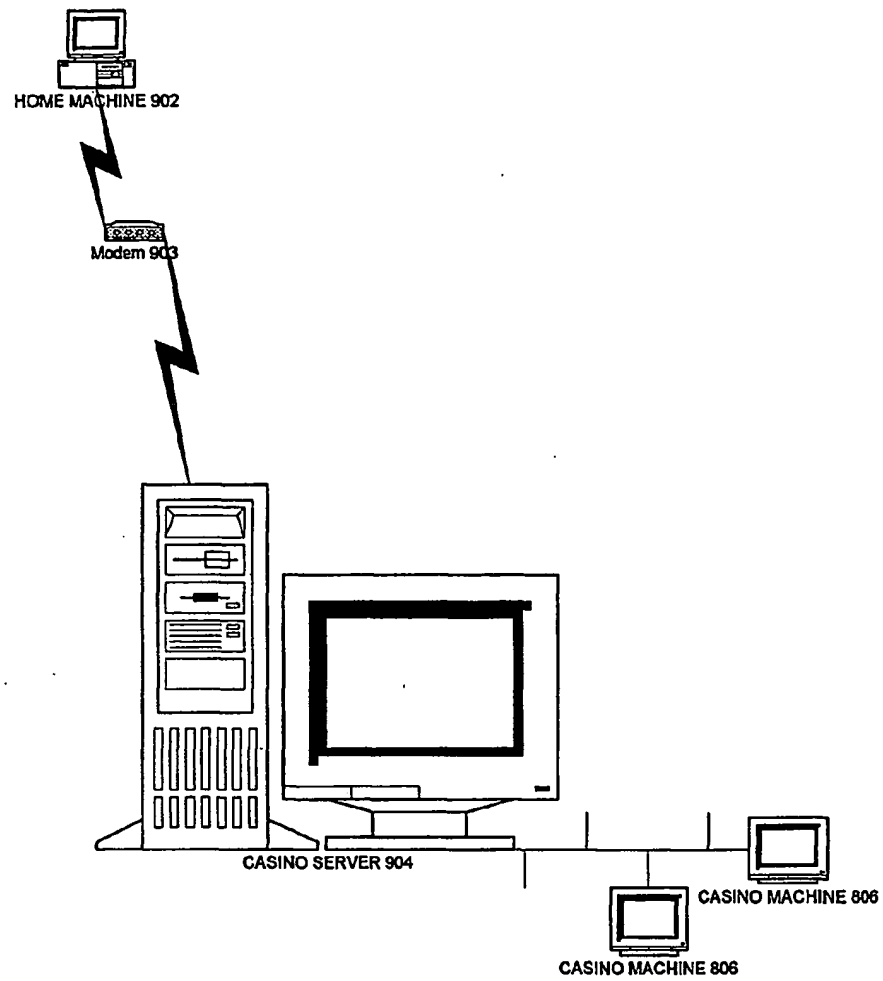
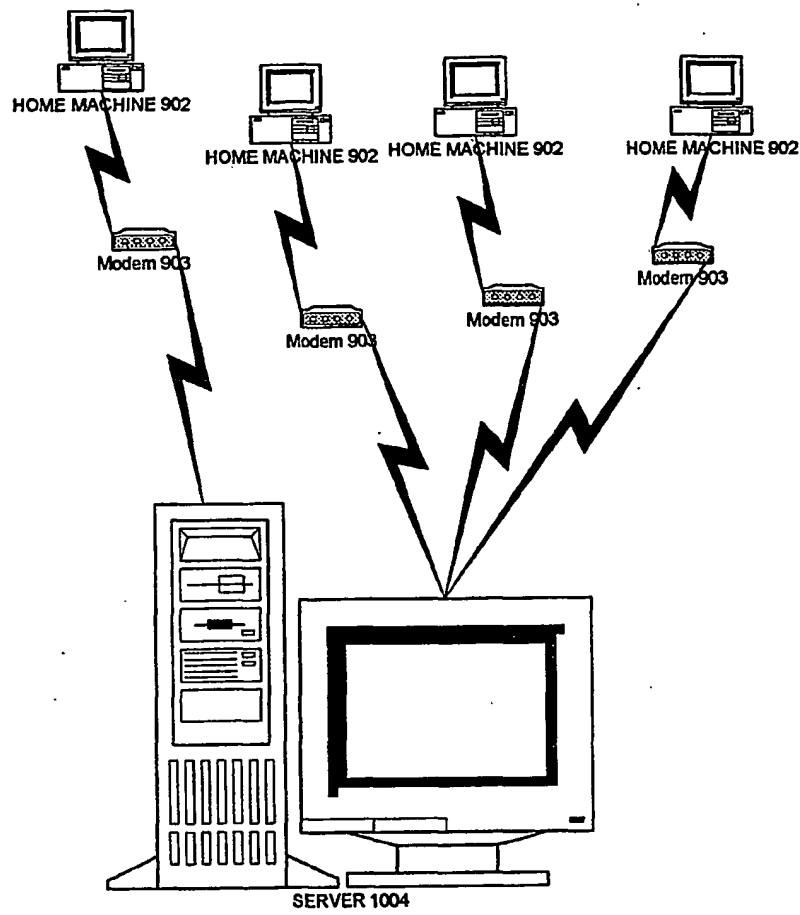


FIG. 6

**FIG. 7**

**FIG. 8**

**FIG. 9**

**FIG. 10**

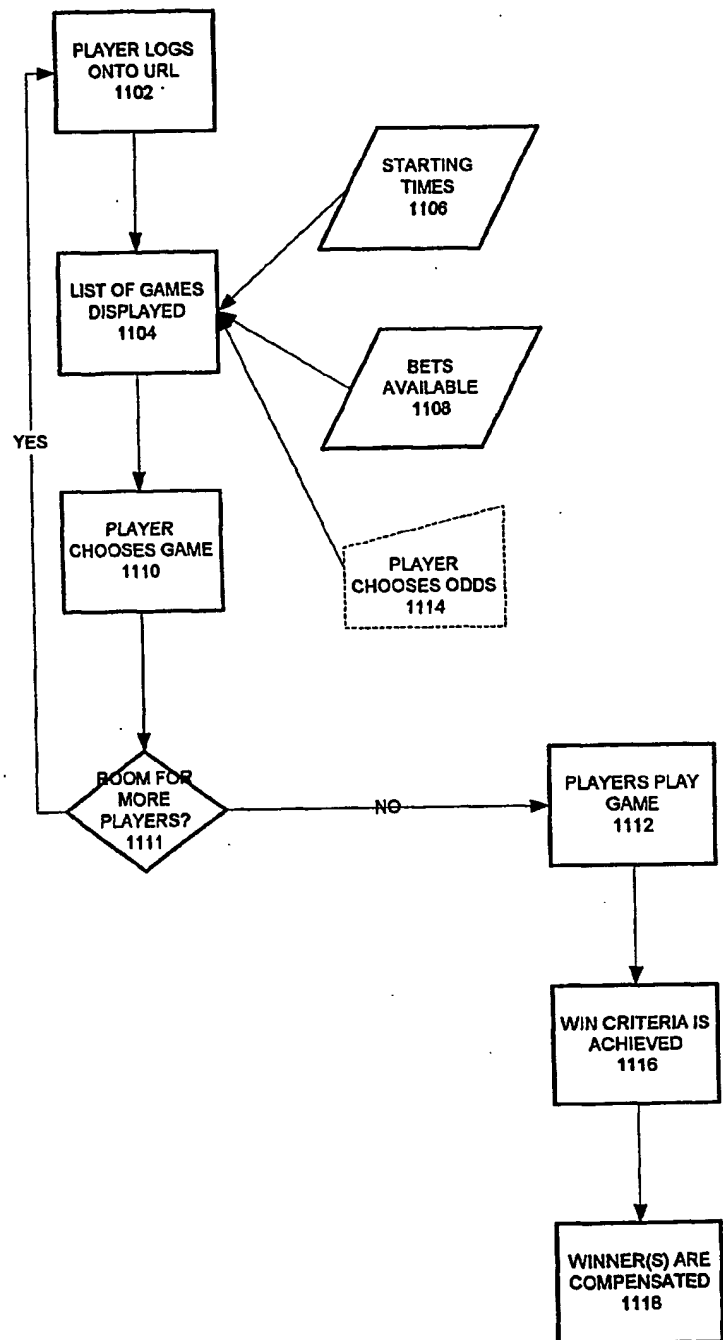


FIG. 11

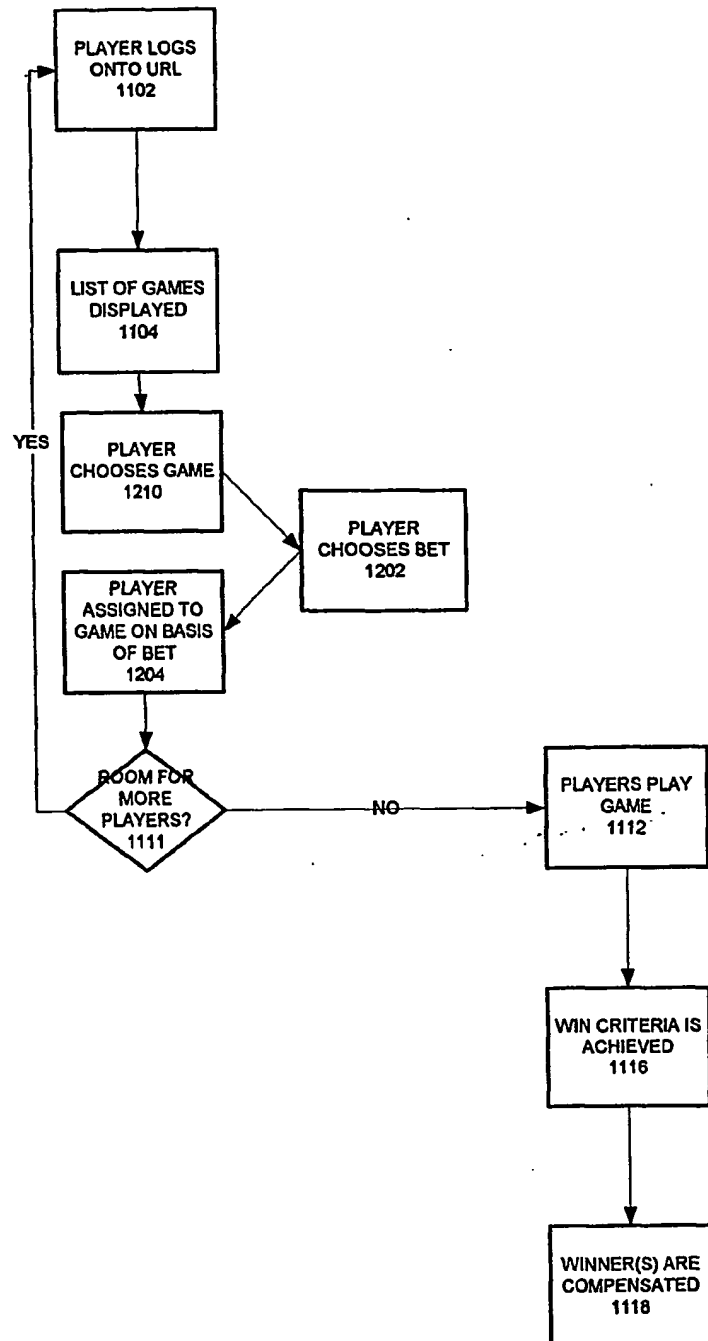


FIG. 12

PLAYS PER HOUR	BET PER PLAY				
	1	2	3	4	5
100	97	97	98	99	100
200	98	99	100	101	102
300	99	100	101	102	103
400	100	100	101	102	103
500	101	102	103	104	105
600	102	103	104	105	105
700	103	104	105	106	106
800	104	104	105	106	106
900	105	105	106	106	106
1000	105	105	106	106	106

TABLE I

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/14901

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :A63F 9/24

US CL :A63/7, 25, 42

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : A63/7, 25, 42, 12, 13, 20; 273/143R, 138.2, 273, 269

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

East

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,816,918 A (KELLY et al.) 06 October 1998, col. 7, lines 18-31, and see entire patent.	1-17
A	GB 2,183,882 A (WAIN) 10 June 1987, see entire patent.	1-17
A	GB 2,205,188 A (MARCHINI) 30 November 1988, see entire patent.	1-17

☐ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	g* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

13 SEPTEMBER 2001

Date of mailing of the international search report

18 OCT 2001

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